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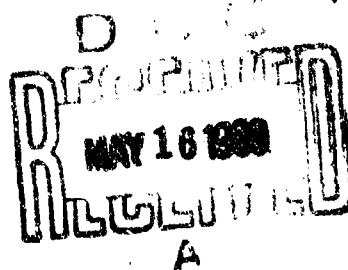
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THE PROBLEM

Pauly has pointed out that insuring a commodity, the demand for which is stochastic and price elastic, leads to a welfare loss which may or may not be offset by the reduction in uncertainty.¹ The example he uses to illustrate his point is medical care. Briefly Pauly's argument is that insurance reduces price below marginal cost and thus acts as any subsidy. Pauly's point, as far as it goes, is well taken, but his example of medical care has led us to a somewhat more general formulation of his case. Specifically we wish to consider the effect of hospital insurance upon the "quality" as well as the quantity of care consumed. Further, we wish to suggest a means of minimizing the distorting influence of insurance. We believe this suggestion is relevant to the current policy debate over the costs of medical care--especially the costs of Medicare and Medicaid.

The purpose of hospital insurance is to reduce the fiscal burden imposed by illness; existing plans accomplish this purpose by lowering the price to the consumer to a small fraction of the true cost. Government and many private insurance plans pay all (or almost all) of a patient's hospital bill regardless of the expensiveness of the hospital. Coinsurance features, if any, leave the consumer responsible for only a small portion of the cost differences between hospitals. To consumers insured by such plans, cost is truly no object. Lack of consumer

*Any views expressed in this paper are those of the author. They should not be interpreted as reflecting the view of The RAND Corporation or the official opinion or policy of any of its governmental or private research sponsors.

¹Mark V. Pauly, "The Economics of Moral Hazard: Comment, "American Economic Review, 58:3, June 1968, pp. 531-7.

concern with price is reflected in a similar lack of concern on the part of the hospital--with the consequence that hospitals compete primarily to provide more and better (and more expensive) service, not to provide more economical service. In attempting to reduce the fiscal burden an illness places on the individual, hospital insurance has contributed to the overall inflation in medical costs.

Insurance plans that lower the price of care to the consumer provide, in effect, a per unit subsidy, which as is well known results in an allocative distortion, assuming that the initial position was one of full competitive equilibrium.¹ The allocative distortion induced by a subsidy will be less, the lower the price elasticity of demand is for the commodity. Since demand for hospital care is generally assumed to be price inelastic, relatively little concern has been evinced among economists about hospital insurance arrangements in medical care. For example, Pauly says, "Insurance is more likely to be provided against those events (a) for which the quantity demanded at a zero price does not greatly exceed that demanded at a positive price . . . [This] statement might be made with respect to ordinary hospitalization insurance."² This notion of relatively low price elasticity of demand for hospital services is also reflected by different coinsurance provisions in Part A and Part B of Medicare. Part A, which insures hospital services has no coinsurance provisions, while Part B, which insures physician services, has a 20 percent coinsurance feature.

¹ See Milton Friedman, "The 'Welfare' Effects of an Income Tax and an Excise Tax," in Essays in Positive Economics, Chicago: University of Chicago Press, 1953, pp. 100-113. We would be the first to admit that the hospital sector, even without insurance, would fall far short of full competitive equilibrium. However, the peculiar institutional arrangements in the hospital market makes this assumption seem conservative. Both because non-profit institutions are relatively free from market pressure and because prestige (and hence quality) are important to most hospitals, we believe the quality of care produced in the absence of insurance would be higher than in full competitive equilibrium. Thus, a subsidy exacerbates the situation.

² Pauly, op.cit., pp. 534-5. Pauly notes that this statement might not be applied to dental care, eyeglasses, or drugs.

While the quantity of hospital care demanded may be relatively price inelastic (in that the individual who needs an appendectomy performed will be relatively insensitive to price in the range of one appendectomy), we suspect that the demand for quality of care may not be so inelastic. That is, many individuals, if they had to bear directly the differences in cost between treatment in a major medical center and treatment in a lower-cost institution, would opt for the latter more often than they do under present insurance plans.¹ If the conjecture is correct, present types of hospital insurance schemes cause a significant misallocation of resources. The greater the price elasticity of demand for quality, the greater the misallocation.

The effect of insurance is illustrated in Figure 1, which shows the situations confronting an ill consumer with insurance and without insurance. The horizontal axis measures the "quality" of the care he would receive in the various hospitals available to him for treatment of his conditions. Quality represents a vector of product characteristics, not all of which are directly related to effectiveness of treatment (for example, room size and furnishings, food quality) but which all affect the cost of treatment. The scale used in Figure 1 makes equal movements along the quality axis represent equal changes in dollar cost of care; thus the budget line AC represents the choices available to the representative sick consumer without insurance. He maximizes his welfare by choosing care of quality OB'.² The slope of the budget line AC is equal to the marginal rate of transformation between the composite bundle of goods and quality of care.³ With insurance his available

¹This exaggerates the role of consumer choice in the selection of hospitals, since individual physicians are restricted to hospitals in which they have staff privileges. The incentives facing physicians in choosing hospitals with which to affiliate and in which to hospitalize patients would seemingly favor high quality hospitals. Under the insurance schemes outlined above, the demands of consumers reinforce these incentives.

²Not all quality choices will actually be available (each hospital represents one point), but for simplicity of exposition the discrete nature of choice will be ignored.

³This follows from the assumption that the initial position was one of full competitive equilibrium.

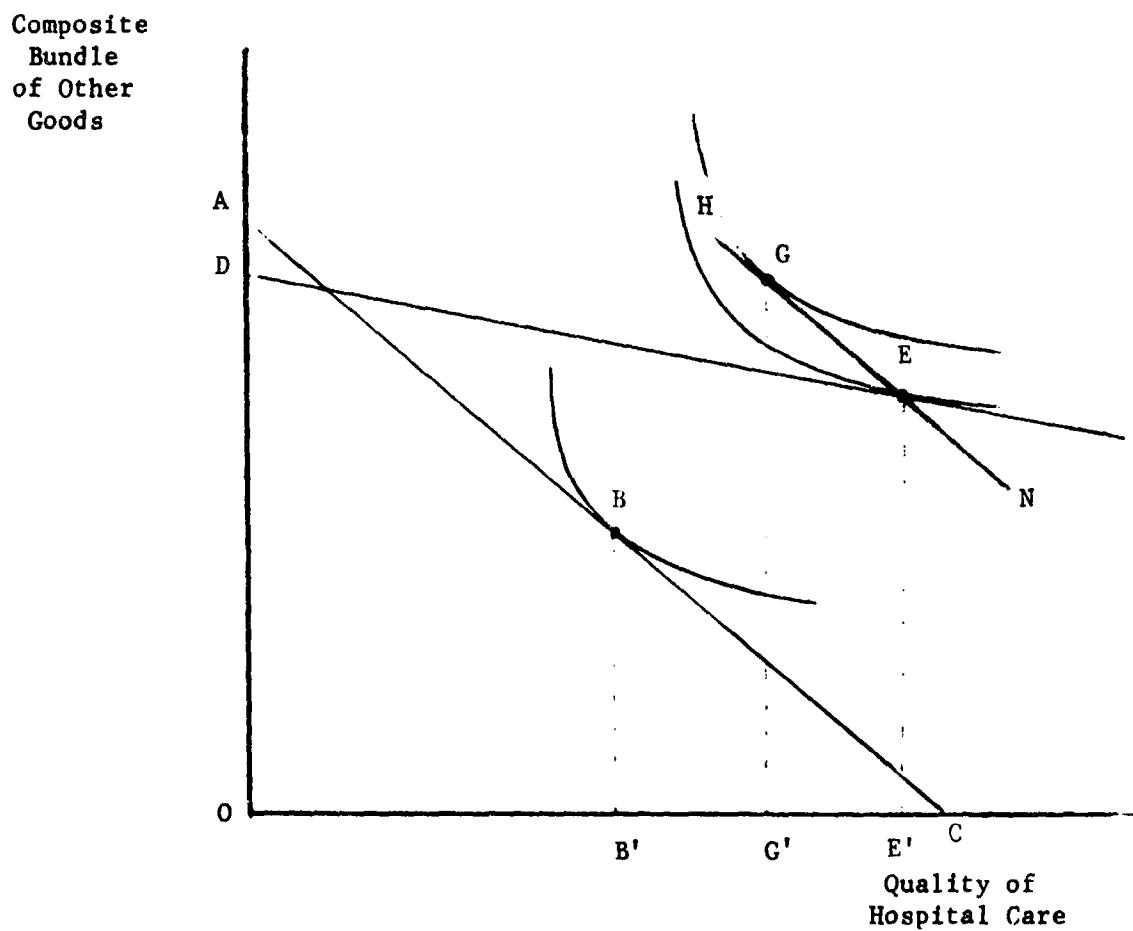


Figure 1

funds to buy other goods will be lower by the price of the insurance policy, but the budget line will have a smaller slope because of the subsidy provided by insurance. Line DEF represents the budget line under a plan with 20 percent coinsurance (it would be horizontal if there were no coinsurance). Faced with this budget line, the consumer chooses care of quality OE'. He has been made better off than at B because of the income transfer provided by insurance in the event of illness. But the income effect of insurance is coupled with a subsidy effect that detracts from the welfare gains. HGEN represents the budget line based on market prices that passes through E. If the consumer were given this income and permitted to purchase care at market prices, he would choose to be at point G. The difference in welfare between E and G measures the welfare loss to the individual caused by the insurance subsidy effect.¹

The desirable effect of hospital insurance is that it effectively increases the income of the sick. Unfortunately, the subsidy effects of many present insurance plans lead individuals to inefficient choices. If a way could be found to transfer resources to sick individuals without disturbing the marginal equalities, all could be made better off. Further, since the effect of the subsidy is to, ceteris paribus, increase the quality of care consumed and hence raise insurance premiums, eliminating the subsidy in government financed plans such as Medicare and Medicaid would have the additional benefit of decreasing the distortions induced by the taxes levied to finance them.

¹ If the ratio of market prices equals the marginal rate of transformation between Other Goods and Hospital Quality, the welfare loss to the individual in moving from G to E is not offset by gains to other members of society. To the extent that the relative market price of Hospital Quality exceeds its relative marginal cost, the welfare loss to society caused by the subsidy effect will be lessened. There is no reason to suppose, however, that this is the case. Certainly any price/marginal cost distortions that exist should be small compared to the 80 percent and 100 percent subsidy rates of the insurance plans under discussion.

A SOLUTION

Our analysis suggests a means of obtaining the income effect of insurance without the distorting subsidy effect: Provide insurance in the form of a lump-sum transfer in kind to hospitalized individuals.¹ The amount of the transfer would be determined by the quality level specified in the insurance policy, and the premiums charged would vary with the level specified. An individual could choose a quality level different than that specified in his policy, but the amount paid by insurance would be fixed. The effect of this proposal is to allow the consumer to reach a budget line similar to HGEN in Figure 1. The exact location of the budget line will be determined by the consumer's risk preferences. Hence, the proposal results in an improvement in the consumer's welfare relative to the care where the insurance plan pays 80 percent of the consumer's bill at any hospital.

This proposal is relevant to the current debate over the costs of the Medicare and Medicaid programs. Currently Medicare and Medicaid make hospital care free to persons covered by the program. The result is to cause overconsumption of hospital services, raising the costs of these programs. Their costs could be lowered with minimum loss of welfare to the recipients by providing a lump-sum-transfer in kind of the type suggested. If the funds thus saved were used on other efficient programs to aid the aged and the poor, the overall welfare of the recipients could be increased from its current level.

Specifically, we propose that government medical insurance plans such as Medicaid or Medicare agree to pay an amount of the hospital bill equal to some percentage, for example 80 percent, of the cost of treating the consumer's illness in the "average" cost hospital in a community. The cost of treating the consumer's illness in the average cost hospital would simply be the bill in the average cost hospital for the services received.² If the consumer wished to go to a higher cost

¹For a discussion of insurance based on this principle, see, J. Newhouse and V. Taylor, "A New Approach to Hospital Insurance," P-4016, The Rand Corporation, Santa Monica, California, January 1969.

²Exceptions would have to be made in cases where unusual forms of therapy were not available in the average hospital.

hospital, he would bear the full cost of that choice. The insurance scheme would not distort relative prices at the margin and hence allocative inefficiencies would be minimized. At the same time, the consumer would be protected against a large reduction in income available to spend on other goods because of the incidence of illness. This plan would not allow the consumer to insure to his preferred quality level as the first plan would, but it may be easier for the government to administer. If feasible, the government could allow the consumer to insure at a higher than average quality level with the proviso that if he did so, he would pay a positive premium.

There are, of course, practical problems in determining costs of treating particular cases in the "average" hospital. We do not believe these problems are insuperable. More importantly, they are certainly easier to solve than those presented by currently proposed schemes to induce "efficiency" by basing hospital reimbursement on target costs. These schemes implicitly assume that the problem is mismanagement of hospitals, since they leave the consumer's choice distorted.¹ Further, both the expected magnitude and the cost of error in determining target cost is probably larger than the expected magnitude and cost of error in determining cost at the average quality hospital. The expected magnitude of error is larger, since target costs are based on what performance at each hospital could be, whereas cost at the average hospital is based on what is. The cost of error is larger since to set target cost too low may cause a hospital to cease operations, but to set reimbursement at a lower (higher) than average quality level means users of high quality hospitals must bear more (less) out-of-pocket to achieve the same quality level.

CONCLUSION

Others have pointed out that insurance acts as a subsidy and, if there is any price elasticity of demand for the commodity being insured,

¹We also believe that hospital management can be improved, but believe our proposal offers incentives in that direction. See Newhouse and Taylor, op.cit.

can lead to a misallocation of resources. Although price elasticity for the quantity of units of hospital care consumed may be low, price elasticity for a number of product characteristics which we call quality may be much higher. Hence, even though price elasticity of demand in the usual sense is low, insurance may result in the production of an inefficient bundle of goods.

The appropriateness of compulsory government medical care insurance raises questions which we do not wish to consider in this note. Assuming that the government will continue to provide some form of insurance, we believe a significant misallocation could be removed if the insurance did not provide a subsidy at the margin. A lump-sum transfer in kind would avoid much of the redistribution of income which would otherwise take place because of illness and still not distort consumer choice at the margin.